Completion Summary for City of Portland Outfall Basin 22C

1 Summary

The City of Portland (City) has been addressing source control concerns related to the City conveyance systems for more than four decades, and several City programs have evolved to meet changing regulatory requirements and watershed health objectives. Following the 2000 listing of Portland Harbor on the National Priorities List, the City initiated a new partnership with the Oregon Department of Environmental Quality (DEQ) Cleanup Program to identify specific sources of contaminants to City stormwater conveyance systems in the harbor that were not being adequately controlled. This report summarizes the results of this collaborative effort in Outfall Basin 22C.

This Completion Summary includes a weight-of-evidence evaluation to demonstrate that source identification is complete and a summary of source controls (implemented or planned) that will control future contaminant discharges to the Willamette River.

Outfall 22C is located on the west side of the Willamette River in the Doane Lake industrial area, just downstream of the Burlington Northern Santa Fe (BNSF) Railroad Bridge. The vast majority of Basin 22C consists of open space in Forest Park. The basin also includes North Doane Lake (a remnant of former Doane Lake), a few industrial sites (including a small portion of the former GASCO site), a railroad corridor, and a section of Oregon Department of Transportation (ODOT) Highway 30/NW St. Helens Road.

Inriver sediment data collected by the City indicated elevated sediment concentrations adjacent to and upstream of the outfall. The City collected stormwater solids and stormwater samples from the basin to determine whether there were additional sources not already being addressed by the DEQ Cleanup Program. In addition to the City's investigations, stormwater, sediment, and dry-weather flow samples are being collected from the City conveyance system by private parties as part of upland site source control evaluations (SCE). Results of these investigations indicate that sources of polycyclic aromatic hydrocarbons (PAH), dioxins and furans, and manganese are present in the basin, and that sources are being addressed by DEQ.

Several DEQ Cleanup Program sites (NW Natural/GASCO and Rhone-Poulenc) outside of the drainage basin are evaluating migration of site contaminants to areas that drain to Basin 22C. PAH-contaminated groundwater, likely associated with historical operations at the former GASCO facility, is infiltrating the conveyance system and discharging at Outfall 22C. DEQ also is working with the Rhone Poulenc facility to investigate and control contaminant discharges to Outfall 22C via North Doane Lake. Several facilities within the basin (Koppers, Siltronic, and ODOT) also are being evaluated in the DEQ Cleanup Program. City source investigation results did not indicate the presence of major contaminant sources other than those already being evaluated by DEQ.

The City confirmed that the major sources of contaminants to the basin have been identified and necessary controls are being implemented under DEQ and/or City authority. Therefore, the

City has met its remedial investigation (RI)/source control measure (SCM) objectives for Basin 22C.

2 Introduction

This Completion Summary presents a weight-of-evidence evaluation of whether further source investigation is needed in Basin 22C, and the rationale for concluding that future discharges from the basin are not likely to be significant sources of contaminants to river sediment. The purpose of this report is to demonstrate that, for Basin 22C, the City has met the joint RI/SCM objectives of the August 13, 2003, intergovernmental agreement (IGA) between the City and DEQ. Together the City and DEQ are using respective authorities to ensure that source controls are implemented where needed.

This report is included in Appendix A of the *Municipal Stormwater Source Control Report for Portland Harbor* (Municipal Report), which provides additional background and detail regarding the City's harborwide source control efforts, including regulatory and non-regulatory programs to address current and future sources and to minimize recontamination potential.

3 Outfall and Basin Setting

3.1 Basin Location and Configuration

Outfall 22C discharges to the west side of the Willamette River at approximately River Mile 6.8, just downriver from the BNSF Railroad Bridge. Figure 1 shows the location of the outfall and drainage basin boundary and provides an overview of the associated stormwater conveyance system. The drainage area for Basin 22C is approximately 1,100 acres. Many of the conveyance systems that drain to Outfall 22C are not managed by the City and include roadside ditches, culverts, a creek channel, and a lake. Basin 22C is has three main branches that discharge into the Northwest Drainage Pond. The largest branch conveys flow from Forest Park and Doane Creek, in the western portion of the basin (western branch). The northern branch conveys stormwater from small portions of Highway 30, the railroad corridor, and the area in the vicinity of the Koppers site. North Doane Lake and the ODOT drainage systems discharging to it comprise the southern drainage area. The Northwest Drainage Pond functions as a natural settling basin for stormwater solids transported through the three branches of the drainage system. Downstream of the pond, discharges to the conveyance system are limited to groundwater infiltration and stormwater runoff from a small parking area at the Siltronic site.

As shown in Figure 1, the conveyance system includes water quality swales in the western branch, near the downstream end of Doane Creek before it crosses beneath Highway 30 and into the Tualatin Hills drainage culvert. These swales are part of a stormwater detention system installed by the City on the former Rivergate Rock Quarry site to treat runoff from approximately 725 acres of Forest Park. The system was designed to reduce sediment loading to the river and includes sedimentation ponds, overflow swales, and trash racks (BES, 1997).

Additional detail on the Outfall 22C stormwater conveyance system and associated drainage basin is included in the *Programmatic Source Control Remedial Investigation Work Plan for the City of Portland Outfalls Project* (CH2M HILL, 2004).

3.2 Land Use and Potential Upland Sources

Land use in approximately 94 percent of the basin is open space in Forest Park; the remainder is heavy industrial, major transportation (ODOT Highway 30), and residential. Land use in the industrial-zoned area includes a small parking lot, railroad corridor, City Police Bureau vehicle impoundment yard (on the former Rivergate Rock Quarry site), Kinder Morgan product facility (formerly Santa Fe Pacific Pipelines site), drop box rental company, electrical substation, auto repair shop, service station, truck/equipment storage, and vacant land.

Sites that were identified as potential sources include DEQ Cleanup Program sites, as identified in DEQ's Environmental Cleanup Site Information (ECSI) database, that are in or partially within Basin 22C. Under the Cleanup Program, the NW Natural Gas Company (GASCO) is investigating properties potentially impacted by historical GASCO operations; several of these properties (Koppers and Siltronic) drain to Basin 22C. In addition, the Siltronic site is also an active independent site in the Cleanup Program to evaluate its current operations. The former Rhone-Poulenc site (now owned by Starlink Logistics, Inc. [SLLI]) is outside of Basin 22C, but is evaluating offsite migration of contaminants to North Doane Lake, which drains to Outfall 22C.

Table 1 lists the sites conducting evaluations within Basin 22C and indicates the associated contaminants of interest (COI) and the status of stormwater and preferential groundwater pathway evaluations. All but one of the sites listed in Table 1 are conducting or have completed stormwater SCEs under DEQ oversight, or DEQ has determined that SCEs are a low priority.

Table 1. DEQ Cleanup Program Sites Within or Partially Within Basin 22C

DEQ Cleanup Program Site	Site COIs (1)	Site Stormwater Pathway Evaluations	
		Stormwater Pathway(2)	Preferential Groundwater Pathway(3)
GASCO - Koppers Industries, Inc. (ECSI #84)(4)	*Stormwater*: VOCs, SVOCs, PAHs, TPH, metals, other (e.g., cyanide) *Groundwater:* VOCs, SVOCs, PAHs, TPH, metals, other (e.g., cyanide).	Source Control Evaluation In Progress	Source Control Decision Completed
GASCO – Siltronic (ECSI #84)	*Stormwater:* VOCs, SVOCs, PAHs, TPH, metals, other (e.g., cyanide) (5) *Groundwater*: VOCs, SVOCs, PAHs, TPH, metals, other (e.g., cyanide)	Source Control Evaluation In Progress	Source Control Evaluation In Progress
ODOT - Portland Harbor Source Control Evaluation (ECSI #5437)	Not listed (6)	Source Control Evaluation In Progress	Not shown
Rhone-Poulenc – Doane Lake/SLLI (ECSI #155) (4)	*Discharge from N. Doane Lake*: VOCs, SVOCs, metals, pesticides, dioxin/furans, PCBs. *Groundwater*: VOC, SVOCs, pesticides, metals, dioxins/furans, PCBs	Source Control Evaluation In Progress	Source Control Evaluation in Progress
Santa Fe Pacific Pipelines - Portland Station (ECSI #2104)	TPH (from gasoline and diesel spills) in soil and groundwater (7)	Need for Source Control Evaluation to be Determined/Low Priority	1999 DEQ Source Control Screening - Low/Medium Priority for Source Control Evaluation

DEQ Cleanup Program Site	Site COIs [1]	Site Stormwater Pathway Evaluations	
		Stormwater Pathway[2]	Preferential Groundwater Pathway[3]
Siltronic Corporation (ECSI #183) [4] (See also GASCO [ECSI #84])	*Stormwater:* Metals, VOCs, PAHs, TPH, PCBs, phthalates [5] *Groundwater*: VOCs	Source Control Evaluation In Progress	Source Control Evaluation In Progress
St. Helens Road Petroleum Contamination (ECSI #2630)	TPH and PAHs in soil and groundwater under the road [7]	Not evaluated [8]	Not shown
V & K Service (ECSI #2423)	*Stormwater*: VOCs, TPH	Need for Source Control Evaluation to be Determined/Low Priority	Not shown

Notes:

PAHs = polycyclic aromatic hydrocarbons; PCBs = polychlorinated biphenyls; SVOCs = semivolatile organic compounds; TPH = total petroleum hydrocarbons; VOCs = volatile organic compounds; DEQ = Oregon Department of Environmental Quality; ECSI = Environmental Cleanup Site Information; ODOT = Oregon Department of Transportation; COIs = contaminants of interest

(1) Unless otherwise noted, site COIs are those identified in Appendix Q (Source Control Inventory Tables) of the Portland Harbor RI/FS Draft Feasibility Study (FS) (Anchor et al., 2012).

(2) Source: DEQ Milestone Report, Figure 1b, "Status of Stormwater Source Control Evaluations, January 2013" (DEQ, 2013).

(3) Source: DEQ Milestone Report, Figure 3, "Groundwater Source Control Evaluation Status, January 2013" (DEQ, 2013).

(4) Site is within the larger Doane Lake Study Area site (ECSI #36). Upon completion of the initial study of this area, DEQ determined it would be more efficient to investigate and clean up individual sites in the study area, rather than as a whole (DEQ, 1995). The Koppers site has a distinct ECSI number (#2348); however, the groundwater and stormwater pathways are being evaluated as part of the GASCO (ECSI #84) evaluation.

(5) Specifically for Basin 22C, Siltronic Corporation is evaluating stormwater discharges to the Willamette River. NW Natural/GASCO is evaluating groundwater discharges to the river, Doane Creek and infiltration into the Basin 22C conveyance system.

(6) Site is not listed in Appendix Q of the draft FS or Table 4.2-2 of the Portland Harbor RI/FS Draft Final Remedial Investigation Report (Integral Consulting et al., 2011), and site COIs are not listed in ECSI database (DEQ, 2012).

(7) COIs are not listed for this site in Appendix Q of the Draft FS or Table 4.2-2 of the Draft Final RI (Integral et al., 2011). COIs listed are based on information on DEQ ECSI database (DEQ, 1999, 2000).

(8) Site is not tracked in DEQ Milestone Report (DEQ, 2013). Site status listed is based on information on DEQ ECSI database (DEQ, 2000). Contamination was detected under St. Helens Road and therefore not expected to affect stormwater.

Industrial sites covered or historically covered by National Pollutant Discharge Elimination System (NPDES) stormwater regulations also were considered as potential sources of pollutants to the basin. Table 2 lists sites within the basin that historically held NPDES permits to discharge to the Basin 22C conveyance system. One site has a current NPDES permit to discharge to this basin. Note that the City and ODOT both have NPDES Municipal Separate Storm Sewer System (MS4) stormwater permits that also cover basin drainage areas.

Table 2. Current[1] and Historical NPDES Permit Coverage in Basin 22C

Address	Company	Permit Type	Time Period
6565 NW St. Helens	Santa Fe Pacific Pipeline Co.	Groundwater (1500-A)	1991 – 2005
7540 NW St. Helens	Koppers Industries	Individual NPDES	1992 – 2010

Address	Company	Permit Type	Time Period
7200 NW Front	**Siltronic Corporation**	Stormwater (1200-L)	1993 – 1996
		Stormwater (1200-Z)	1997 – Present

Notes:

NPDES = National Pollutant Discharge Elimination System

(1) Current permits are indicated in bold.

3.3 Outfall Setting

Outfall 22C discharges to a large area of potential concern (AOPC 14) identified by the U.S. Environmental Protection Agency (EPA) based on elevated concentrations of PCBs, pesticides, metals and other contaminants in river sediment (EPA, 2010). In addition to Outfall 22C, 1 other City outfall (Outfall 22B) and 12 other active and inactive non-City outfalls discharge to AOPC 14.

4 Basin Screening and Source Investigations

The City identified Basin 22C as a Priority 1 for source tracing based on evaluation of surface sediment collected in the vicinity of the outfall in 2002 (CH2M HILL, 2004). Priority 1 basins are considered the highest priority for source investigation and identification. The subsequent Phase I Report for City of Portland Priority 1 Basins identified PAHs, DDT constituents, and arsenic for source tracing in Basin 22C based on further evaluation of the inriver sediment data and consideration of potential sources to the conveyance system (GSI, 2006a). Information reviewed for the Phase I investigation also indicated that likely sources of these contaminants (e.g., GASCO/Siltronic, Koppers, and Rhone-Poulenc/SLLI) already were in the DEQ Cleanup Program and were conducting stormwater SCEs under DEQ oversight. Therefore, the City's source investigation activities in this basin focused on verifying that there were not additional major sources of these or other contaminants.

City source investigation activities in Basin 22C included analyzing solids from the northern branch of the conveyance system (in 2003/2004 and 2006), evaluating sediment data collected from the Northwest Drainage Pond, and analyzing stormwater samples from the western branch of the system and the outfall. The City did not conduct investigations in the southern branch of the system because that portion of the conveyance system is owned and operated by ODOT and that area is being investigated by ODOT and SLLI. In addition, other parties conducted sampling in various parts of the City conveyance system as part of upland site SCEs. Results of the investigations indicate that major sources of PAHs are present in the basin. Offsite migration of contaminated sediment from North Doane Lake is also a potential current source to Outfall 22C.

Significantly elevated total PAHs concentrations were detected in stormwater solids from the northern branch of the City conveyance system in 2003/2004 and 2006 (BES, 2007a). Total PAH concentrations also were elevated in sediments collected from Doane Creek downstream of the Koppers facility (HAI, 2011) and at the outlet of Northwest Drainage Pond (HAI, 2006; AMEC,

2010; BES, 2007b). Former stormwater runoff and/or batch discharges from the Koppers site, as well as spillage of solid pencil pitch (a type of material known to contain high levels of PAHs) into the street, during material transport to the Koppers facility before 2002,[1] were identified as likely sources of the PAHs detected in this portion of the system (BES, 2007a). Most of the stormwater drainage from the Koppers facility has been disconnected from Basin 22C and rerouted to the sanitary sewer system (Anchor and HAI, 2010). A small drainage area remains and DEQ is working with the site to complete formal abandonment of this area.

The former GASCO facility is a major known source of PAHs related to the historical oil-gas manufacturing operations, and groundwater beneath the site is contaminated with PAHs (DEQ, 2001). NW Natural is evaluating impacts to adjacent properties, including those in Basin 22C. Based on data from dry-weather flow sampling conducted in Doane Creek (HAI, 2011) and at the outfall (HAI, 2006; AMEC, 2010), PAHs appear to be entering the Basin 22C conveyance system between the Northwest Drainage Pond and the outfall. Infiltration of groundwater from a GASCO-related PAH plume into the City stormwater line is a likely source of the elevated PAH concentrations in dry-weather flow at the outfall. NW Natural is evaluating this preferential groundwater pathway as part of its remedial investigation of the Siltronic site (HAI, 2007).

As part of the Basin 22C source investigation, the City evaluated sediment data collected by upland sites from the Northwest Drainage Pond to determine what contaminants may be migrating offsite to Outfall 22C in sediment. Results indicate that PAHs, dioxins and furans, and manganese migrated from upland sources to the Northwest Drainage Pond. PAHs, dioxins and furans, and metals have been detected in North Doane Lake sediment; SLLI is evaluating the North Doane Lake pathway as part of the remedial investigation for the site (AMEC, 2011). SCEs also are underway at the Koppers site and in the ODOT drainage areas.

In 2007 and 2008, the City collected stormwater samples from the western branch of the conveyance system and from the outfall to determine whether additional source investigation was warranted in this portion of the basin where DEQ Cleanup Program sites are not located. Data indicated that major sources of PAHs and metals are not present in the western branch (BES, 2009) and that further source tracing was not warranted for other contaminants in Basin 22C (BES, 2010).

Table 3 lists investigations and evaluations completed by the City and others in the Basin 22C conveyance system.

Table 3. Investigations in the Basin 22C Stormwater Conveyance System

Data Collection Period	Party	Purpose	Documentation
2000	City	Compile basin background information to identify potential sources.	Preliminary Evaluation of City Outfalls (West Shore) (BES, 2000)

[1] Deliveries of solid pencil pitch to this facility ceased before 2002.

Data Collection Period	Party	Purpose	Documentation
2002	City	Evaluate inriver sediment data near City outfalls to prioritize basins for source tracing.	Programmatic Source Control Remedial Investigation Work Plan (CH2M HILL, 2004)
2002	Rhone-Poulenc	Collect sediment samples from the Northwest (NW) Drainage Pond for analysis of Rhone Poulenc-related contaminants.	Remedial Investigation/Source Control Evaluation Report, RP – Portland Site (AMEC, 2010)
2003	NW Natural	Collect water samples from the NW Drainage Pond for evaluation in NW Natural's source control evaluation.	City of Portland Outfall 22C Drainage Sampling Activities, Siltronic Corporation Property (HAI, 2006)
2002 – 2003, 2009	Rhone-Poulenc/ SLLI	Collect a stormwater sample (2003) and dry-weather flow samples (2002, 2003, and 2009) from Outfall 22C for analysis of Rhone Poulenc-related contaminants.	Remedial Investigation/Source Control Evaluation Report, RP – Portland Site (AMEC, 2010)
2003, 2004	City	Analyze inline solids samples collected in the vicinity of the Koppers facility for waste characterization before line cleaning and post-cleaning for waste disposal.	City Outfall Basin 22C Inline Solids Sampling in the Vicinity of Koppers Industries, Inc. Technical Memorandum No. OF22C-2 (BES, 2007a)
2005	City	Evaluate existing data on groundwater plumes and identify the potential for City conveyance systems (including Basin 22C) to act as preferential pathways.	Relationships Between Upland Shallow Groundwater Plumes and the City Stormwater and Combined Conveyance System with the Portland Harbor (GSI, 2006b)
2005	NW Natural	Collect a sediment sample from the NW Drainage Pond, and collect stormwater and dry-weather flow samples from the outlets of the Tualatin Hills drainage culvert, the Koppers culvert, North Doane Lake, and Outfall 22C for analysis of GASCO-related contaminants.	City of Portland Outfall 22C Drainage Sampling Activities, Siltronic Corporation Property (HAI, 2006)
2006	City	Collect inline solids near the Koppers facility to determine whether there was a current source of PAHs to this part of the system.	City Outfall Basin 22C Inline Solids Sampling in the Vicinity of Koppers Industries, Inc. Technical Memorandum No. OF22C-2 (BES, 2007a)
NA	City	Evaluate existing sediment data from the NW Drainage Pond.	City Outfall Basin 22C Northwest Drainage Pond Evaluation. Technical Memorandum No. OF22C-3 (BES, 2007b)
2006	City	Focus source tracing activities based on evaluation of observed contaminants and identified sources.	Phase I Report for City of Portland Priority 1 Basins (GSI, 2006a)

Data Collection Period	Party	Purpose	Documentation
2007	City	Collect stormwater samples at the outlet of the Tualatin Hills drainage culvert to assess whether major sources are present in the western branch.	City Outfall Basin 22C Stormwater Investigation- Tualatin Hills Drainage Culvert. Technical Memorandum No. OF22C-3(1) (BES, 2009)
2007 – 2008	Lower Willamette Group	Collect harborwide stormwater and sediment trap data in Doane Creek upstream of Highway 30 to develop Open Space stormwater loading estimates for input to the inriver fate and transport model.	Portland Harbor RI/FS Round 3A and 3B Stormwater Data Report (Anchor and Integral, 2008)
2008	City	Evaluate stormwater data from City outfalls to identify additional source tracing needs.	Stormwater Evaluation Report. City of Portland, Bureau of Environmental Services (BES, 2010).
2010	NW Natural	Collect sediment and surface water samples from Doane Creek for analysis of GASCO-related contaminants.	Remedial Investigation Data Summary Report, Historical Manufactured Gas Plant Activities Siltronic Corporation Property, (HAI, 2011)

Notes:

NA = not applicable

(1) Technical memorandum number was duplicated in error, and should have been numbered OF22C-4.

The City's investigation and data evaluation confirmed that the only current major sources of contaminants in the basin are those that already had been identified and are being addressed under the DEQ Cleanup Program.

5 Completion of Source Identification

The lines of evidence evaluated to verify that source tracing is complete and all major sources have been identified include (1) results of source tracing activities conducted in the basin (including review of upland site information) and (2) land use at remaining upland areas not undergoing DEQ Cleanup Program investigation. Findings from this evaluation are summarized below:

- *Source Investigation Results*. PAHs have been elevated in dry-weather flow samples collected from the outfall and historical GASCO operations have been identified as the likely upland source of PAH-contaminated groundwater to the basin. Sediment data evaluation also indicates current and/or historical sources of PAHs, dioxins and furans, and metals to the Northwest Drainage Pond. These contaminants have been detected at one or more DEQ Cleanup Program sites discharging to the pond. The City's investigations did not identify elevated contaminant concentrations in stormwater from the western branch of the conveyance system (BES, 2009) and did not identify any analytes as potentially warranting further source tracing in Basin 22C (BES, 2010).

- *Upland Investigation Coverage and Land Use*: The vast majority of the land use in Basin 22C is open space (see Figure 1). Figure 2 displays the spatial extent of DEQ Cleanup Program site investigations and other programmatic controls (see key to figures provided at beginning of this Appendix) within the developed portion of the basin. As shown in Figure 2, most of the basin area east of NW St. Helens Road is being investigated under DEQ oversight. Most remaining developed sites:
    - Have been designated by DEQ as not needing an SCE or as a low priority for completing an SCE;
    - Discharge to ODOT drainage systems that are being evaluated under the ODOT investigation;
    - Have been inspected by the City Industrial Stormwater Program to evaluate and provide technical assistance on industrial exposures to stormwater; and/or
    - Do not warrant investigation because of land use (e.g., residential) and lack of industrial exposures to stormwater.

    Land uses at industrial sites currently not covered by DEQ Cleanup or Water Quality Programs consist of parking, equipment storage, drop-box storage, automotive service operations, and a foundry equipment wholesale business, all of which have minimal industrial exposures to stormwater. Current and future industrial activities that are exposed to stormwater will be addressed by the DEQ NPDES Program, and non-industrial activities are not a known or suspected major source of contaminants to the City stormwater conveyance system.

Based on these lines of evidence, the City concludes that Basin 22C source tracing is complete and all major sources have been identified.

6 Basin Source Controls

The City and DEQ collaborated under their respective authorities to identify control mechanisms for all sources identified in the basin. Source control for major and minor sources in Basin 22C includes ongoing City and DEQ programs that are described in the Municipal Report, SCMs completed (or planned) at contaminated sites under DEQ Cleanup Program agreements, and specific controls implemented within the City's shared stormwater conveyance system (e.g., targeted line cleaning). Source controls implemented in Basin 22C are displayed in Figures 1 and 2 and summarized in this section.

The City of Portland Police Bureau operates an evidence storage facility at the former Rivergate Rock Quarry at 7027 NW St. Helens Road. The City constructed stormwater treatment at the site to reduce sediment loading to the basin from the adjacent upgradient portion of Forest Park.

Table 4 presents site-specific, programmatic, and conveyance system source controls completed to date for Basin 22C.

Table 4. Basin 22C Source Controls

Site / Area	Source Controls	Implementation Timeframe
Source Control Measures (SCM) at DEQ Cleanup Program Sites [1]		
GASCO - Koppers Industries, Inc. (ECSI #84)[2] (Part of former GASCO site – ECSI #84)	The majority of site stormwater has been rerouted to the sanitary sewer system. DEQ is working with the site to complete and document formal abandonment of two remaining catch basins that are connected to Basin 22C. Additional SCMs to be determined.	2008; To be determined
GASCO-Siltronic (ECSI #84)	SCMs related to the GASCO PAH plume are being determined as part of the site RI.	To be determined
ODOT – Portland Harbor Source Control Evaluation (ECSI #5437)	To be determined	To be determined
Rhone Poulenc - Doane Lake (ECSI #155)	To be determined	To be determined
Santa Fe Pacific Pipelines - Portland Station (ECSI #2104)	NA [3]	NA
Siltronic Corporation (ECSI #183) (See also GASCO [ECSI#84])	SCMs not anticipated for parking area draining to Outfall 22C, but need for SCMs to be determined.	To be determined
St. Helens Road Petroleum Contamination (ECSI #2630)	NA[4]	NA
V & K Service (ECSI #2423)	NA[3]	NA
City Conveyance System		
Tualatin Creek drainage culvert	After acquiring the former Rivergate Quarry site in the 1980s, the City constructed a sediment management facility at the site (including settling ponds, trash racks, and engineered swales) to reduce suspended sediment in runoff from approximately 725 acres of Forest Park.	Constructed ~1990 - 1993; operation ongoing
Northern branch	The City cleaned storm lines in the vicinity of the Koppers facility to remove contaminated inline solids.	2004

Site / Area	Source Controls	Implementation Timeframe
Other (Programmatic SCMs)		
6433 NW St. Helens	**Stormwater Management Manual Requirements**	Ongoing
See listing in Table 2	**NPDES 1200-Z Stormwater Permit Requirements**	Ongoing

Notes:

DEQ = Oregon Department of Environmental Quality; NPDES = National Pollutant Discharge Elimination System; ECSI = Environmental Cleanup Site Information; RI = remedial investigation; NA = not applicable

(1) For upland sites, descriptions of SCMs are based on information in DEQ Milestone Report (DEQ, 2013), DEQ source control decisions, and/or reports on file with DEQ.

(2) Site is within the larger Doane Lake Study Area site (ECSI #36). The Koppers site has a distinct ECSI number (#2348); however, the groundwater and stormwater pathways are being evaluated as part of the GASCO (ECSI #84) evaluation.

(3) DEQ has determined that a source control evaluation is not needed or is a low priority at this site (DEQ, 2013).

(4) Based on information in ECSI database (DEQ, 2000) and the fact that this site is not tracked in the DEQ Milestone Report (DEQ, 2013), a source control evaluation likely is not needed at this site.

All major contaminant sources have been controlled or will be controlled after implementation of SCMs has been completed under the programs identified above.

The City and ODOT both have NPDES MS4 stormwater permits that cover basin drainage areas. Other municipal programs (e.g., periodic inspection of and technical assistance to non-NPDES sites, illicit discharge monitoring, street sweeping, etc.) likely provide additional source control benefits in the basin and will help to address minor sources for which specific control measures have not been required. City programs that control current and future contaminant discharges to the conveyance system are described in the Municipal Report.

7 Conclusion

The City completed source tracing in Basin 22C and confirmed that the major sources of contaminants to the City conveyance system already had been identified. Given that necessary SCMs at identified sources have been implemented or are being determined under appropriate DEQ and City regulatory authorities, future discharges from Outfall 22C are unlikely to represent a significant source of contaminants to the river. The City concludes that it has met the RI/SCM objectives of the IGA and requests a source control decision from DEQ for Basin 22C.

8 References

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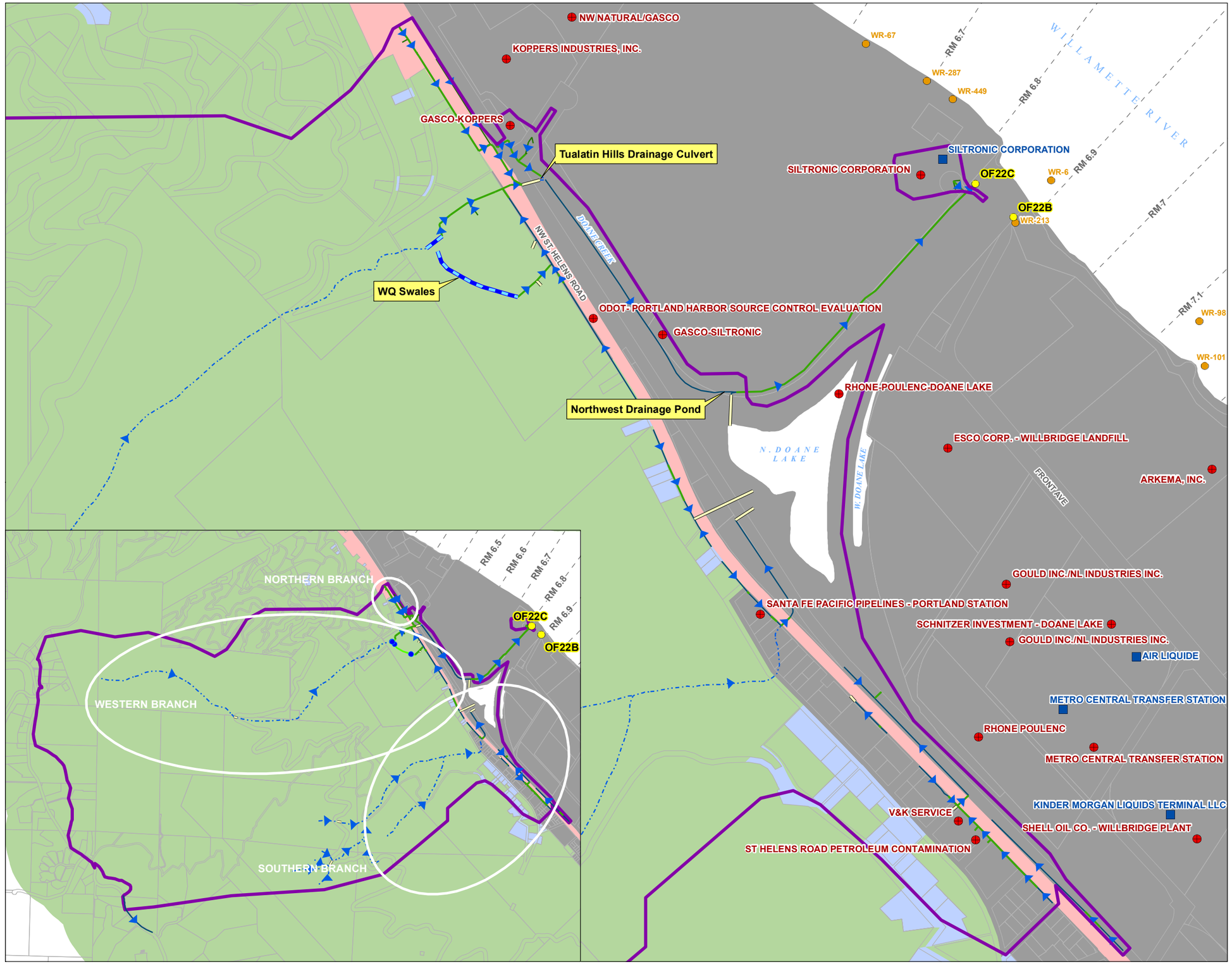
List of Figures

FIGURE 1

Basin 22C
Overview and Conveyance System Source Controls



Basin 22C
- DEQ ECSI Site
- NPDES Stormwater Permit

Conveyance System
- Storm Line
- Ditch
- Channel
- Culvert
- Water Quality (WQ) Swale
- City Outfall
- Non-City Outfall

Land Use/Zoning
- Heavy Industrial
- Residential
- Parks and Open Space
- Major Transportation

All Other Data
- River Mile (RM)
- Tax Lot
- Discharges to City Outfall
- Portland Harbor Hydroboundary

N

0 260 520 780
Feet

MAP NOTES:
Date: December 31, 2013
Data Sources: BES, METRO

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
1120 SW Fifth Avenue, Room 1000
Portland Oregon, 97204 - 1912

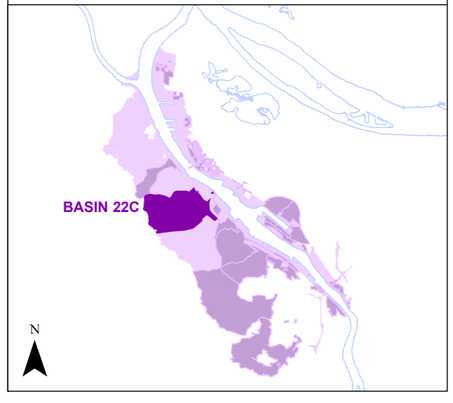


FIGURE 2

Basin 22C
Upland Site Source Controls

Basin 22C
Tax Lot

DEQ Stormwater SCEs

SCE implemented or pending
SCE not needed or low priority

All Other Features

NPDES Stormwater Discharge Permit
>50% of Site Area Redeveloped Under City SWMM
Stormwater Treatment Facility
Site Inspection - BES Industrial Stormwater Program
Discharges to City Outfall
Portland Harbor Hydroboundary

N

0 260 520 780
Feet

MAP NOTES:
Date: December 31, 2013
Data Sources: BES, METRO, Aerial Photo Taken 2012

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